

# DEEP-SEA RESEARCH

VOLUME 36, 1989

## VOLUME CONTENTS AND AUTHOR INDEX

### *Editors*

DR JOHN D. MILLIMAN: *Department of Geology and Geophysics,  
Woods Hole Oceanographic Institution, Woods Hole, MA 02543, U.S.A.*

*Founder Editor: DR MARY SEARS*



PERGAMON PRESS

OXFORD · NEW YORK · BEIJING · FRANKFURT · SÃO PAULO  
SYDNEY · TOKYO · TORONTO

# DEEP-SEA RESEARCH

## Editor

DR JOHN D. MILLIMAN: *Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, U.S.A.*

---

## Associate Editors

M. P. BACON (*Chemistry*)  
*Woods Hole Oceanographic Institution,  
Woods Hole, MA 02543, U.S.A.*

R. HESSLER (*Benthic Biology*)  
*Scripps Institution of Oceanography,  
La Jolla, CA 92093, U.S.A.*

A. SOURNIA (*Water Column Productivity*)  
*Laboratoire de Géologie,  
Muséum National d'Histoire Naturelle,  
43, Rue de Buffon, 75005 Paris, France*

R. P. HARRIS (*Water Column Biology*)  
*Marine Biological Association,  
Citadel Hill, Plymouth PL1 2PB, U.K.*

D. QUADFASEL (*Physical Oceanography*)  
*Institut für Meereskunde,  
Tropowitzstrasse 7, 2000 Hamburg 54,  
F.R.G.*

T. McDougall (*Oceanic Modelling*)  
*CSIRO/Division of Oceanography,  
G.P.O. Box 1538, Hobart,  
Tasmania 7001, Australia*

---

## Founder Editor: DR MARY SEARS

Publishing, Subscription and Advertising Offices: Headington Hill Hall, Oxford OX3 0BW, U.K.  
(Oxford 64881)

## Published monthly

Annual institutional subscription rate (1990) DM 2030.00; two-year institutional rate (1990/91) DM 3857.00 (this includes Parts A and B, and postage and insurance).

Personal subscription rate for those whose library subscribes at the regular rate (1990) DM 305.00 (this includes Parts A and B). Prices are subject to change without notice.

Back issues of all previously published volumes, in both hard copy and on microform, are available direct from Pergamon Press Offices.

Subscription enquiries from customers in North America should be sent to: Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, U.S.A. and for the remainder of the world to: Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, U.K.

Copyright © 1990  
Pergamon Press plc

It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. However, assignment of copyright is not required from authors who work for organizations which do not permit such assignment. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

### Photocopying information for users in the U.S.A.

The Item-Fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying, beyond that permitted by Section 107 or 108 of the United States Copyright Law, is paid. The appropriate remittance of \$3.00 per copy per article is paid directly to the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

### Permission for other use.

The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

The Item-Fee Code for this publication is: 0198-0149/89 \$3.00 + 0.00.

## Contents of Volume 36

### January

- A. R. PIOLA and A. L. GORDON 1 Intermediate waters in the southwest South Atlantic
- P. CHANG and S. G. H. PHILANDER 17 Rossby wave packets in baroclinic mean currents
- G. C. JOHNSON and H. L. BRYDEN 39 On the size of the Antarctic Circumpolar Current
- M. M. HALL 55 Temperature and velocity corrections for vertical motion of a mooring at 35°N, 152°E in the Kuroshio Extension
- R. A. WHEATCROFT, C. R. SMITH and P. A. JUMARS 71 Dynamics of surficial trace assemblages in the deep sea
- K. SOETAERT and C. HEIP 93 The size structure of nematode assemblages along a Mediterranean deep-sea transect
- E. A. LAWS, G. R. DiTULLIO, P. R. BETZER, D. M. KARL and K. L. CARDER 103 Autotrophic production and elemental fluxes at 26°N, 155°W in the North Pacific subtropical gyre
- D. E. CANFIELD 121 Sulfate reduction and oxic respiration in marine sediments: implications for organic carbon preservation in euxinic environments
- Instruments and Methods*
- J. OCHOA 139 A practical determination of CTD platinum resistance thermometer response time, and its use to correct salinity bias and spikes

*Note*

M. T. GRÜNDLINGH

*Book Reviews*

M. HANTEL

J. D. MILLIMAN

*Erratum*

List of Contents for *Continental Shelf Research*, Vol. 8, No. 12

149 Two contra-rotating eddies of the Mozambique Ridge Current

155 *A view of the sea*, by Henry Stommel

156 *Georges Bank*, edited by Richard H. Backus

157

i

### February

*Rapid Response Paper*  
A. L. ALLDREDGE and  
C. C. GOTSCHALK

159 Direct observations of the mass flocculation of diatom blooms: characteristics, settling velocities and formation of diatom aggregates

**Research Papers**

A. J. VAN BENNEKOM,  
J. H. F. JANSEN, S. J. VAN DER GAAST,  
J. M. VAN IPEREN and J. PIETERS

D. M. NELSON, W. O. SMITH Jr,  
R. D. MUENCH, L. I. GORDON,  
C. W. SULLIVAN and D. M. HUSBY

D. A. SIEGEL, T. D. DICKEY,  
L. WASHBURN, M. K. HAMILTON and  
B. G. MITCHELL

Q. DORTCH and T. T. PACKARD

K. S. JOHNSON, S. W. WILLASON,  
D. A. WIESENBURG, S. E. LOHRENZ  
and R. A. ARNONE

S. KRISTIANSEN and B. AA. LUND

J. GOY, P. MORAND and M. ETIENNE

W. M. BALCH, M. R. ABBOTT and  
R. W. EPPLEY

H. MERCIER

**Instruments and Methods**

T. R. S. WILSON, S. D. MCPHAIL,  
A. C. BRAITHWAITE, B. KOCH,  
A. DOGAN and A. DISTECHE

List of Contents for *Continental Shelf Research*, Vol. 9, No. 1

173 Aluminium-rich opal: an intermediate in the preservation of biogenic silica in the Zaire (Congo) deep-sea fan

191 Particulate matter and nutrient distributions in the ice-edge zone of the Weddell Sea: relationship to hydrography during late summer

211 Optical determination of particulate abundance and production variations in the oligotrophic ocean

223 Differences in biomass structure between oligotrophic and eutrophic marine ecosystems

241 Hydrogen peroxide in the western Mediterranean Sea: a tracer for vertical advection

255 Nitrogen cycling in the Barents Sea—I. Uptake of nitrogen in the water column

269 Long-term fluctuations of *Pelagia noctiluca* (Cnidaria, Scyphomedusa) in the western Mediterranean Sea. Prediction by climatic variables

281 Remote sensing of primary production—I. A comparison of empirical and semi-analytical algorithms

297 A study of the time-averaged circulation in the western North Atlantic by simultaneous nonlinear inversion of hydrographic and current meter data

315 An instrument to measure pH and formation factor *in situ* across the seawater—sediment interface

i

**March**

323 Baltimore Canyon as a modern conduit of sediment to the deep sea

359 Brazil—Malvinas Confluence—1984

385 Synoptic three-dimensional circulation in an onshore-flowing filament of the California Current

407 Upper ocean thermal and flow fields at 0°, 28°W (Atlantic) and 0°, 140°W (Pacific) during 1983—1985

P. M. TATE, I. S. F. JONES and  
B. V. HAMON

S. SATHYENDRANATH, T. PLATT,  
C. M. CAVERHILL, R. E. WARNOCK  
and M. R. LEWIS

C. N. FLAGG and S. L. SMITH

*Note*

L. G. ANDERSON, E. P. JONES,  
K. P. KOLTERMANN, P. SCHLOSSER,  
J. H. SWIFT and D. W. R. WALLACE

List of Contents for *Continental Shelf Research*, Vol. 9, No. 2

419 Time and space scales of surface temperatures in  
the Tasman Sea, from satellite data

431 Remote sensing of oceanic primary production:  
computations using a spectral model

455 On the use of the acoustic Doppler current profiler  
to measure zooplankton abundance

475 The first oceanographic section across the Nansen  
Basin in the Arctic Ocean

i

**April**

*Rapid Response Paper*

P. A. JUMARS, D. L. PENRY,  
J. A. BAROSS, M. J. PERRY and  
B. W. FROST

*Research Papers*

J. E. BROPHY and D. J. CARLSON

A. J. PLUEDDEMANN and R. PINKEL

L. PADMAN and T. M. DILLON

T. L. HOPKINS and J. J. TORRES

M. M. GOWING and S. L. COALE

D. SHOOTER and P. BRIMBLECOMBE

R. D. M. NASH, J. J. MAGNUSON,  
T. K. STANTON and C. S. CLAY

B. R. RUDDICK, T. J. McDougall and  
J. S. TURNER

P. L. MANLEY and R. D. FLOOD

*Instruments and Methods*

R. A. JAHNKE and  
M. B. CHRISTIANSEN

483 Closing the microbial loop: dissolved carbon  
pathway to heterotrophic bacteria from  
incomplete ingestion, digestion and absorption in  
animals

497 Production of biologically refractory dissolved  
organic carbon by natural seawater microbial  
populations

509 Characterization of the patterns of diel migration  
using a Doppler sonar

531 Thermal microstructure and internal waves in the  
Canada Basin diffusive staircase

543 Midwater food web in the vicinity of a marginal  
ice zone in the western Weddell Sea

561 Fluxes of living radiolarians and their skeletons  
along a northeast Pacific transect from coastal  
upwelling to open ocean waters

577 Dimethylsulphide oxidation in the ocean

587 Distribution of peaks of 70 kHz acoustic  
scattering in relation to depth and temperature  
during day and night at the edge of the Gulf  
Stream—EchoFront 83

597 The formation of layers in a uniformly stirred  
density gradient

611 Anomalous sound velocities in near-surface,  
organic-rich, gassy sediments in the central  
Argentine Basin

625 A free-vehicle benthic chamber instrument for sea  
floor studies

*Note*

L. STRAMMA

List of Contents for *Continental Shelf Research*, Vol. 9, No. 3

*Obituary*

J. H. MARTIN, R. M. GORDON  
S. FITZWATER and W. W. BROENKOW

S. L. GARZOLI and Z. GARRAFFO

D. M. NELSON, J. J. McCARTHY,  
T. M. JOYCE and H. W. DUCKLOW

R. W. SPINRAD, H. GLOVER,  
B. B. WARD, L. A. CODISPOTI and  
G. KULLENBERG

R. D. PINGREE and A. L. NEW

P. P. NEWTON and P. S. LISS

J. P. BETHOUX

J. LOSEE, K. RICHTER, S. LIEBERMAN  
and D. LAPOTA

*Instruments and Methods*

R. H. BYRNE and J. A. BRELAND

*Erratum*

List of Contents for *Continental Shelf Research*, Vol. 9, No. 4

*Obituary*

D. C. CHAPMAN

K. H. BRINK

639 The Brazil Current transport south of 23°S

i

**May**

647 KONSTANTIN NIKOLAEVICH FEDOROV

649 VERTEX: phytoplankton/iron studies in the Gulf  
of Alaska

681 Transports, frontal motions and eddies at the  
Brazil - Malvinas Currents Confluence

705 Enhanced near-surface nutrient availability and  
new production resulting from the frictional decay  
of a Gulf Stream warm-core ring

715 Suspended particle and bacterial maxima in  
Peruvian coastal waters during a cold water  
anomaly

735 Downward propagation of internal tidal energy  
into the Bay of Biscay

759 Surface charge characteristics of oceanic  
suspended particles

769 Oxygen consumption, new production, vertical  
advection and environmental evolution in the  
Mediterranean Sea

783 Bioluminescence: spatial statistics in the North  
Atlantic

803 High precision multiwavelength pH determina-  
tions in seawater using cresol red

811

i

**June**

813 BRUNO SCOTTO DI CARLO

815 Enhanced subinertial diurnal tides over isolated  
topographic features

825 The effect of stratification on seamount-trapped  
waves

L. D. KEIGWIN and G. A. JONES	845	Glacial - Holocene stratigraphy, chronology, and paleoceanographic observations on some North Atlantic sediment drifts
D. O. SUMAN and M. P. BACON	869	Variations in Holocene sedimentation in the North American Basin determined from $^{230}\text{Th}$ measurements
A. MACKENSEN and R. G. DOUGLAS	879	Down-core distribution of live and dead deep-water benthic foraminifera in box cores from the Weddell Sea and the California continental borderland
J. Y. ALLER	901	Quantifying sediment disturbance by bottom currents and its effect on benthic communities in a deep-sea western boundary zone
R. S. PICKART and N. G. HOGG	935	A tracer study of the deep Gulf Stream cyclonic recirculation
J. C. ANDREWS and S. CLEGG	957	Coral Sea circulation and transport deduced from modal information models

*Note*

J. DE VAUGELAS

- 975 Deep-sea *lebensspuren*: remarks on some echiuran traces in the Porcupine Seabight, northeast Atlantic

*Corrigenda*

983

List of Contents for *Continental Shelf Research*, Vol. 9, No. 5

i

**July**

R. C. DUGDALE and F. P. WILKERSON	985	New production in the upwelling center at Point Conception, California: temporal and spatial patterns
M. A. BRZEZINSKI and D. M. NELSON	1009	Seasonal changes in the silicon cycle within a Gulf Stream warm-core ring
B. B. WARD, H. E. GLOVER and F. LIPSCHULTZ	1031	Chemoautotrophic activity and nitrification in the oxygen minimum zone off Peru
E. V. STANEV	1053	Numerical modelling of the circulation and the hydrogen sulphide and oxygen distribution in the Black Sea
A. MASUDA	1067	A laboratory experiment on the Kuroshio meander

*Instruments and Methods*

M. R. BUCHHOLTZ-TEN BRINK,  
G. GUST and D. CHAVIS

G. H. RAU, M. HEYRAUD and  
R. D. CHERRY

- 1083 Calibration and performance of a stirred benthic chamber
- 1103  $^{15}\text{N}/^{14}\text{N}$  and  $^{13}\text{C}/^{12}\text{C}$  in mesopelagic shrimp from the northeast Atlantic Ocean: evidence for differences in diet

*Notes*

K. L. SMITH, Jr

E. D. BARTON and A. E. HILL

List of Contents for *Continental Shelf Research*, Vol. 9, No. 6

1111 Short time-series measurements of particulate organic carbon flux and sediment community oxygen consumption in the North Pacific

1121 Abyssal flow through the Amirante Trench (western Indian Ocean)

i

**August**

*Rapid Response Papers*

W. W. C. GIESKES and G. W. KRAAY

R. LANDE, W. K. W. LI,  
E. P. W. HORNE and A. M. WOOD

1127 Estimating the carbon-specific growth rate of the major algal species groups in eastern Indonesian waters by  $^{14}\text{C}$  labeling of taxon-specific carotenoids

1141 Phytoplankton growth rates estimated from depth profiles of cell concentration and turbulent diffusion

*Research Papers*

R. LANDE and M. R. LEWIS

R. T. COONEY

F. SCHOTT, J. C. SWALLOW and  
M. FIEUX

W. M. BALCH, R. W. EPPLEY and  
M. R. ABBOTT

D. KROON and G. GANSSEN

S. E. ROTH and J. DYMOND

J. H. MIDDLETON and  
S. E. HUMPHRIES

*Instruments and Methods*

S. RAHMSTORF

*Note*

J. G. MITCHELL, A. OKUBO,  
J. A. FUHRMAN and W. COCHLAN

1161 Models of photoadaptation and photosynthesis by algal cells in a turbulent mixed layer

1177 Acoustic evidence for the vertical partitioning of biomass in the epipelagic zone of the Gulf of Alaska

1191 Deep currents underneath the equatorial Somali Current

1201 Remote sensing of primary production—II. A semi-analytical algorithm based on pigments, temperature and light

1219 Northern Indian Ocean upwelling cells and the stable isotope composition of living planktonic foraminifers

1237 Transport and settling of organic material in a deep-sea hydrothermal plume: evidence from particle flux measurements

1255 Thermohaline structure and mixing in the region of Prydz Bay, Antarctica

1267 Improving the accuracy of wind speed observations from ships

1277 The contribution of phytoplankton to ocean density gradients

## September

- G. T. TAYLOR 1287 Variability in the vertical flux of microorganisms and biogenic material in the epipelagic zone of a North Pacific central gyre station
- M. D. OHMAN, J. M. BRADFORD and J. B. JILLETT 1309 Seasonal growth and lipid storage of the circumglobal, subantarctic copepod, *Neocalanus tonsus* (Brady)
- S. L. BLUMSACK and G. L. WEATHERLY 1327 Observations of the nearby flow and a model for the growth of mudwaves
- M. M. RUTGERS VAN DER LOEFF and A. J. VAN BENNEKOM 1341 Weddell Sea contributes little to silicate enrichment in Antarctic Bottom Water
- D. ROEMMICH 1359 Mean transport of mass, heat, salt and nutrients in southern California coastal waters: implications for primary production and nutrient cycling
- T. NAGANUMA, A. OTSUKI and H. SEKI 1379 Abundance and growth rate of bacterioplankton community in hydrothermal vent plumes of the North Fiji Basin
- C. H. PILSKALN, A. C. NEUMANN and J. M. BANE 1391 Periplatform carbonate flux in the northern Bahamas
- K. S. JOHNSON, C. M. SAKAMOTO-ARNOLD and C. L. BEEHLER 1407 Continuous determination of nitrate concentrations *in situ*

*Instruments and Methods*

- R. A. MORTLOCK and P. N. FROELICH 1415 A simple method for the rapid determination of biogenic opal in pelagic marine sediments
- K. L. SMITH Jr, D. ALEXANDROU and J. L. EDELMAN 1427 Acoustic detection and tracking of abyssopelagic animals: description of an autonomous split-beam acoustic array

*Note*

- E. UCHUPI and R. D. BALLARD 1443 Evidence of hydrothermal activity on Marsili Seamount, Tyrrhenian Basin

## October

- Rapid Response Paper*
- D. M. CHECKLEY, Jr and C. A. MILLER 1449 Nitrogen isotope fractionation by oceanic zooplankton

*Research Papers*

J. V. GARTNER, Jr and J. A. MUSICK

J. W. MURRAY, J. N. DOWNS,  
S. STROM, C.-L. WEI and  
H. W. JANNASCH

M. J. YOUNGBLUTH, T. G. BAILEY,  
P. J. DAVOLL, C. A. JACOBY,  
P. I. BLADES-ECKELBARGER and  
C. A. GRISWOLD

M. TOMCZAK and D. HAO

A. AURAS-SCHUDNAGIES, D. KROON,  
G. GANSSEN, C. HEMLEBEN and  
J. E. VAN HINTE

D.-P. WANG

U. SCHAUER

J. H. TIETJEN, J. W. DEMING,  
G. T. ROWE, S. MACKO and  
R. J. WILKE

J. H. TIETJEN

*Instruments and Methods*

D. K. COSTELLO, K. L. CARDER,  
P. R. BETZER and R. W. YOUNG

List of Contents for *Continental Shelf Research*, Vol. 9, No. 9

L. WASHBURN, D. A. SIEGEL,  
T. D. DICKEY and M. K. HAMILTON

K. D. GRANDE, P. J. LE B. WILLIAMS,  
J. MARRA, D. A. PURDIE,  
K. HEINEMANN, R. W. EPPLEY and  
M. L. BENDER

C. GOYET and A. POISSON

1457 Feeding habits of the deep-sea fish, *Scopelogadus beanii* (Pisces: Melamphaidae), in the western North Atlantic

1471 Nutrient assimilation, export production and  $^{234}\text{Th}$  scavenging in the eastern equatorial Pacific

1491 Fecal pellet production and diel migratory behavior by the euphausiid *Meganyctiphanes norvegica* effect benthic - pelagic coupling

1503 Water masses in the thermocline of the Coral Sea

1515 Distributional pattern of planktonic foraminifers and pteropods in surface waters and top core sediments of the Red Sea, and adjacent areas controlled by the monsoonal regime and other ecological factors

1535 Model of mean and tidal flows in the Strait of Gibraltar

1549 A deep saline cyclonic eddy in the West European Basin

1567 Meiobenthos of the Hatteras Abyssal Plain and Puerto Rico Trench: abundance, biomass and associations with bacteria and particulate fluxes

1579 Ecology of deep-sea nematodes from the Puerto Rico Trench area and Hatteras Abyssal Plain

1595 *In situ* holographic imaging of settling particles: applications for individual particle dynamics and oceanic flux measurements

i

**November**

1607 Isopycnal mixing and the distribution of particles across the North Pacific Subtropical Front

1621 Primary production in the North Pacific gyre: a comparison of rates determined by the  $^{14}\text{C}$ ,  $\text{O}_2$  concentration and  $^{18}\text{O}$  methods

1635 New determination of carbonic acid dissociation constants in seawater as a function of temperature and salinity

- D. M. KARL, A. M. BRITTAINE and  
B. D. TILBROOK
- J. TAYLOR and P. BUCENS
- A. R. LONGHURST, A. BEDO,  
W. G. HARRISON, E. J. H. HEAD,  
E. P. HORNE, B. IRWIN and  
C. MORALES
- J. R. N. LAZIER and K. H. MANN
- V. J. FABRY
- S. NICOL and M. STOLP
- D. L. KIRCHMAN, R. G. KEIL and  
P. A. WHEELER
- Instruments and Methods*
- S. HARA and E. TANOUYE
- List of Contents for *Continental Shelf Research*, Vol. 9, Nos 10 and 11
- 1655 Hydrothermal and microbial processes at Loihi Seamount, a mid-plate hot-spot volcano
- 1675 Laboratory experiments on the structure of salt fingers
- 1705 NFLUX: a test of vertical nitrogen flux by diel migrant biota
- 1721 Turbulence and the diffusive layers around small organisms
- 1735 Aragonite production by pteropod molluscs in the subarctic Pacific
- 1753 Sinking rates of cast exoskeletons of Antarctic krill (*Euphausia superba* Dana) and their role in the vertical flux of particulate matter and fluoride in the Southern Ocean
- 1763 The effect of amino acids on ammonium utilization and regeneration by heterotrophic bacteria in the subarctic Pacific
- 1777 Simultaneous staining with three fluorescent dyes of minute plankters on an agarose gel filter

i

**December**

**BIOLOGICAL, PHYSICAL AND GEOLOGICAL STUDIES OF FOUR PACIFIC SEAMOUNTS**

- K. L. SMITH Jr, W. C. SCHWAB,  
M. NOBLE and C. DE MOUSTIER
- M. NOBLE and L. S. MULLINEAUX
- A. GENIN, M. NOBLE and  
P. F. LONSDALE
- R. E. KAYEN, W. C. SCHWAB,  
H. J. LEE, M. E. TORRESAN,  
J. R. HEIN, P. J. QUINTERNO and  
L. A. LEVIN
- C. E. REIMERS and W. W. WAKEFIELD
- R. S. KAUFMANN, W. W. WAKEFIELD  
and A. GENIN
- 1785 Physical, geological and biological studies on four Pacific seamounts: introduction
- 1791 Internal tidal currents over the summit of Cross Seamount
- 1803 Tidal currents and anticyclonic motions on two North Pacific seamounts
- 1817 Morphology of sea-floor landslides on Horizon Guyot: application of steady-state geotechnical analysis
- 1841 Flocculation of siliceous detritus on the sea floor of a deep Pacific seamount
- 1863 Distribution of epibenthic megafauna and *lebenssspuren* on two central North Pacific seamounts

L. A. LEVIN and C. L. THOMAS

1897 The influence of hydrodynamic regime on  
infaunal assemblages inhabiting carbonate  
sediments on central Pacific seamounts

K. L. SMITH Jr, R. J. BALDWIN and  
J. L. EDELMAN

1917 Supply of and demand for organic matter by  
sediment communities on two central North  
Pacific seamounts

